



## Crystal Creek Water Ditch



### TRAIL HEAD DIRECTIONS

Starting at the Whiskeytown Visitor Center, drive west on Hwy 299 for 8.4 miles. Turn left on Crystal Creek Road and cross the bridge. The trailhead and parking area is about 0.1 miles farther on the left.

### TRAIL DESCRIPTION

The first 200 feet of trail drops about 35 feet via two switchbacks, and is the only section of trail with significant elevation change. At



Clean-out house

the second switchback is the clean out house, a structure added in 1913 by Charles Camden's daughter.

This ingenious water powered rotary rake removes pinecones, leaves, and other debris from the flowing water before it tunnels under Hwy 299 and flows east to the Camden house, about a half mile away.

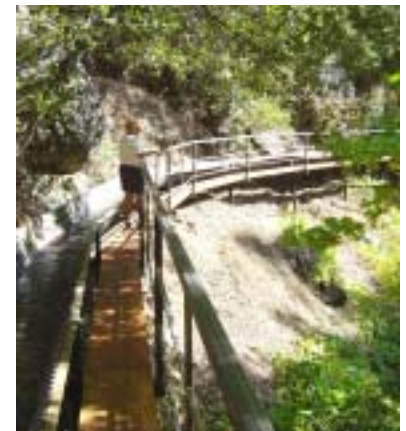
The trail now follows the water ditch through a forest of canyon live oaks and ponderosa pines.

### FEATURES

- 0.75 miles one way; essentially no elevation change
- Structural elements of historic water ditch
- Well shaded trail beside Crystal Creek
- First half wheelchair accessible
- Hiking only

About 200 yards from the clean out house is the first of seven drainage crossovers that allow seasonal runoff from small gullies to cross but not flood the ditch.

At about the quarter mile mark Crystal Creek, heretofore audible, becomes visible. Along the left side of the trail are several stone retaining walls. These were originally made of logs and timber, some remnants of which are still visible in places.



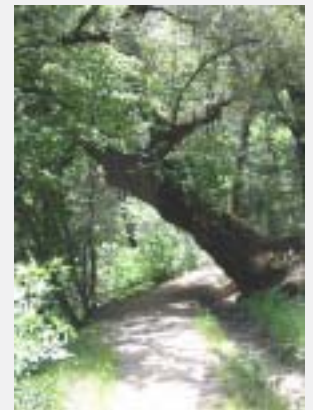
Exercise caution when traversing the trestle boardwalk

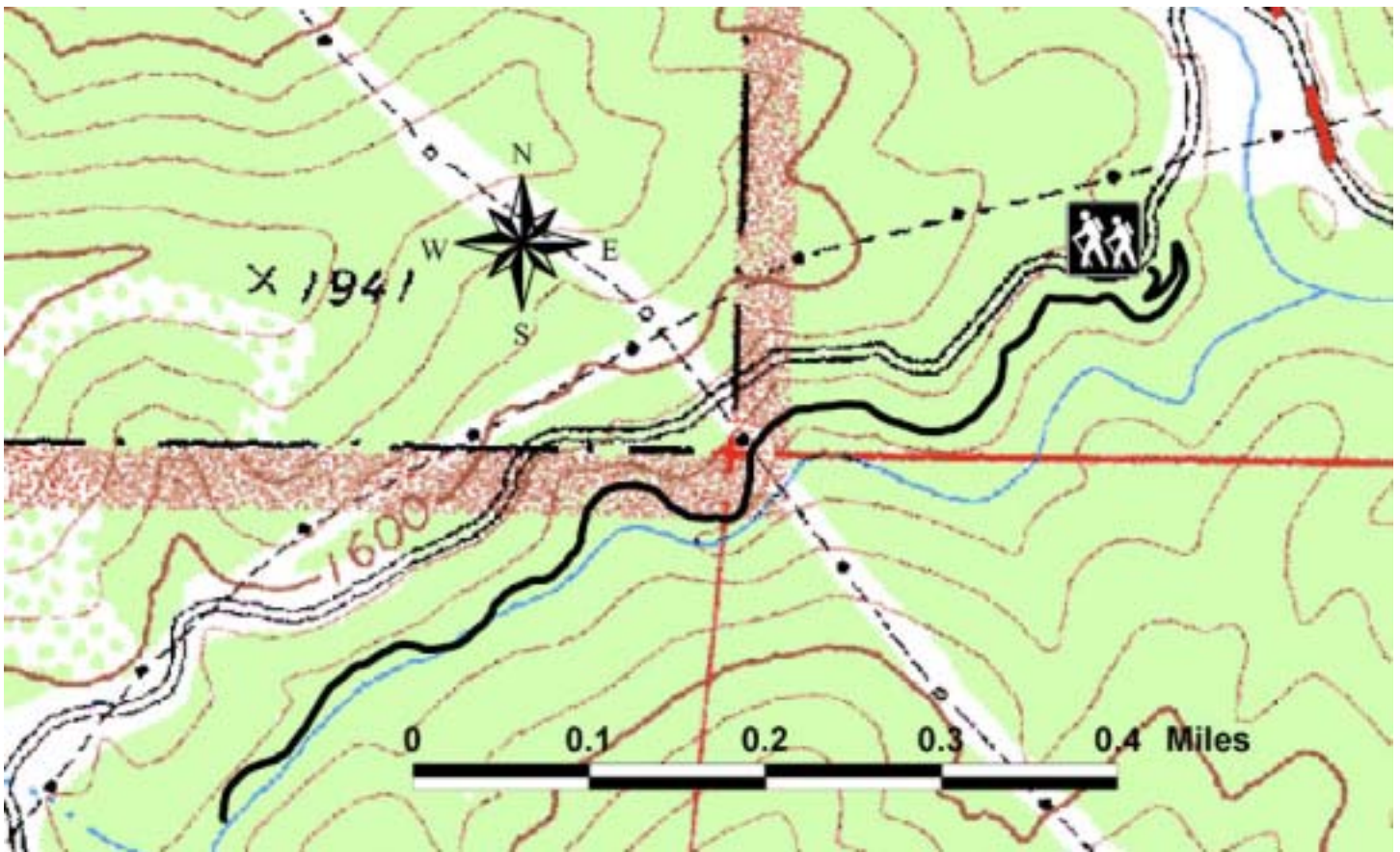
Six hundred yards further the hillside is too steep to support a ditch, even with retaining walls, hence the picturesque 250-foot trestle supporting the ditch flume and pedestrian boardwalk with a splendid vista of Crystal Creek. Originally both trestle and flume were made of timber, presumably from Camden's sawmill on nearby Mill Creek which was operating by 1853. Wheelchair access ends at the beginning of the boardwalk.

Another quarter mile brings us to the ditch headworks. Some nimbleness and care is required to pursue the rocky and narrow trail to its end. Note the tree roots precariously clutching the stone face on the south side of the tunnel.

***Trees along the trail are primarily canyon live oaks and ponderosa pines with occasional Douglas firs, incense cedars, and blue and black oaks.***

***Smaller plants transition from arid species like white-leaf manzanita, toyon, scrub oak and ceanothus at the beginning of the trail to Himalayan blackberry and California wild grape and finally riparian varieties like sword ferns and scotch broom along the creek near the trail's end.***





## Water Rights

*"Between 1855 and 1858 I made the upper ditch from Crystal Creek down to the Tower house....",* writes Charles Camden in his 1900 autobiography.

Then, as now, water was a precious resource in a land where many streams dry up in the summer months.

Camden claimed water rights to Crystal Creek and Mill Creek and hired laborers to construct ditches to supply water to his sawmill on Mill Creek and to his scattered mining claims nearby. The surplus he sold profitably to other miners.

This particular ditch apparently was designed to supply water for creek-side

placer mines, for domestic use at the Camden house, and for orchard irrigation. A century and a half later it is still in operation for the latter purpose. The system operates entirely by gravity, dropping some 41 feet in elevation over the approximately 2-mile length of the original ditch.

The trail follows only about one-third of the original ditch, from the headworks to the clean out house. Originally the ditch continued past the cleanout house slicing diagonally across Crystal Creek Road and extending another 200 yards along the contour. From there it crossed the ravine now housing Hwy 299 in a 900 ft. U-tube constructed of 12 ft. bored pine logs.

Across the road the ditch flows southeast towards the Tower House Historic District area and discharges into a redwood tank on the hillside, the excess spilling under French Gulch Road into Clear Creek.

## DITCH ENGINEERING

Water is introduced into the ditch by means of a diversion dam across Crystal Creek. The dam pools water to an elevation where it spills into the ditch inlet through a concrete gate structure. A wooden baffle can be raised or lowered in the slots for coarse control of the flow rate.

Some 50 feet downstream of the inlet the ditch widens into an elongated settling basin. The increased cross-sectional area decreases the velocity and allows entrained silt, sand, and small pebbles to precipitate. Further is a concrete sluice. The float at



Ditch entrance gate

the end acts as a flow controller and diverts excess water through the overflow back into Crystal Creek. The sluice discharges into a short tunnel carved through the steep stone hillside, a testament to the determination of the ditch makers.

The final engineering element is somewhat of a puzzle. The concrete structure is clearly the housing for an undershot water wheel. The puzzle is what it was used for since there is hardly room for even a small mill.



Concrete sluice discharges into short tunnel.

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